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TWO BOPYRIDS (ISOPODA) FROM NEW GUINEA

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ABSTRACT: The female *Parathelges weberi* has been previously described, but the male, host, and locale were unknown. These data are here provided and a new species of *Pseudione* is described from the same area.

Four parasitized crabs were obtained from the collection of the "Alpha Helix" Expedition to New Guinea. From a study of these forms, it was determined that there were 2 epicarid isopod genera — one parasite represented a new species of *Pseudione* (a branchial bopyrid); while the other was the first record for the male, the host, and the area for *Parathelges weberi* (an abdominal bopyrid).

Parathelges weberi Nierstrasz and Brender à Brandis, 1923.

Figure 1A

Host: Female of *Calcinus laevimanus* (Randall). Site: Lagoon, 22 miles north of Maiwara, Northeast New Guinea, at 0-2 feet, on broken coral bottom. Date: 21 September 1969. Collector: K. Kirk, I. Richards, and E. Ball. The host and site given here are the first record for the species.

Description: Female. Essentially the same description as that given by Nierstrasz and Brender à Brandis (1923). Located on the dorsal abdomen of the host, with the head of the parasite directed towards the posterior of the host, and the dorsum of the bopyrid against the host. The measurements of the holotype were 9 mm by 3.25 mm, whereas the new specimen measured 6 mm by 2.5 mm. No hyperparasites were found in the marsupium of the "Alpha Helix" form, whereas, a *Duplorbis smithi* was reported from the brood chamber of the "Siboga" specimen (Nierstrasz and Brender à Brandis, 1923).

Male. 2.5 mm greatest length, 1.0 mm greatest width. Antennae I short, 2-3 articles. Antennae II long, 5 articles, with many flagellum subdivisions. Eyes obvious, though small. Cephalon definitely separated from thoracomere I. Pereopods in a group of 3 pairs, then a gap, followed by the posterior 4 pairs. No mid-ventral tubercles. Scattered, weak, dorsal pigment spots. Lateral portions of thoracomeres non-contiguous, with the largest gap between III and IV. All thoracomeres the same length. Pleon completely fused, with a clear "envelope" peripherally. Pleon length about equal to total width of 3 thoracomeres. No pleopods. Slight mid-ventral pigment spots.

Remarks: Whitelegge (1897) described a new bopyrid species from Funafuti (Ellice Islands), which he named *Athelgue aniculi*. Bonnier (1900) changed this to *Parathelges aniculi* (Whitelegge, 1897), on the basis of the lack of sudden size diminution between the pereon and the pleon, such as is found in *Athelges* (accepted spelling). Nierstrasz and Brender à Brandis (1923) recognized this generic difference, and erected the new species *P. weberi* for a specimen in the "Siboga" collection which showed neither host nor locale. These authors indicated that *P. weberi* was similar to *P. aniculi*, but gave adequate points of difference to justify the former species.

There are 2 other species of *Parathelges* — *P. racovitzai* Codreanu (1940) and *P. whiteleggei* Nierstrasz and Brender à Brandis (1931) — plus several related genera such as *Anathelges* Bonnier (1900), *Athelges* Hesse (1861), and *Metathelges* Nierstrasz and Brender à Brandis (1923). Previous works in New Guinea by authors such as Nobili (1905) and Weber (1892), did not mention any form which could have been *Parathelges weberi*.

Despite the wide European and Pacific distribution of the "Athelges" types, there are apparently none in North America (Danforth, 1970).

The female and male described herein have been deposited in the Allan Hancock Foundation Collection, University of Southern California.

Pseudione novaeguineensis, new species

Figure 1B-G

Pseudione Kossman 1881.

Host: Clibanarius sp., aff. *longitarsus* (De Haan). Site: On mangrove roots, near Maiwara, New Guinea, lat. 5°4.4′ S, long. 145°43.7′ E. Date: 26 October 1969. Collector: E. Ball.

Description: Female. Length 3.5 mm, width 2.0 mm. From right gill chamber of host; head of bopyrid directed downward and to rear. Marsupium

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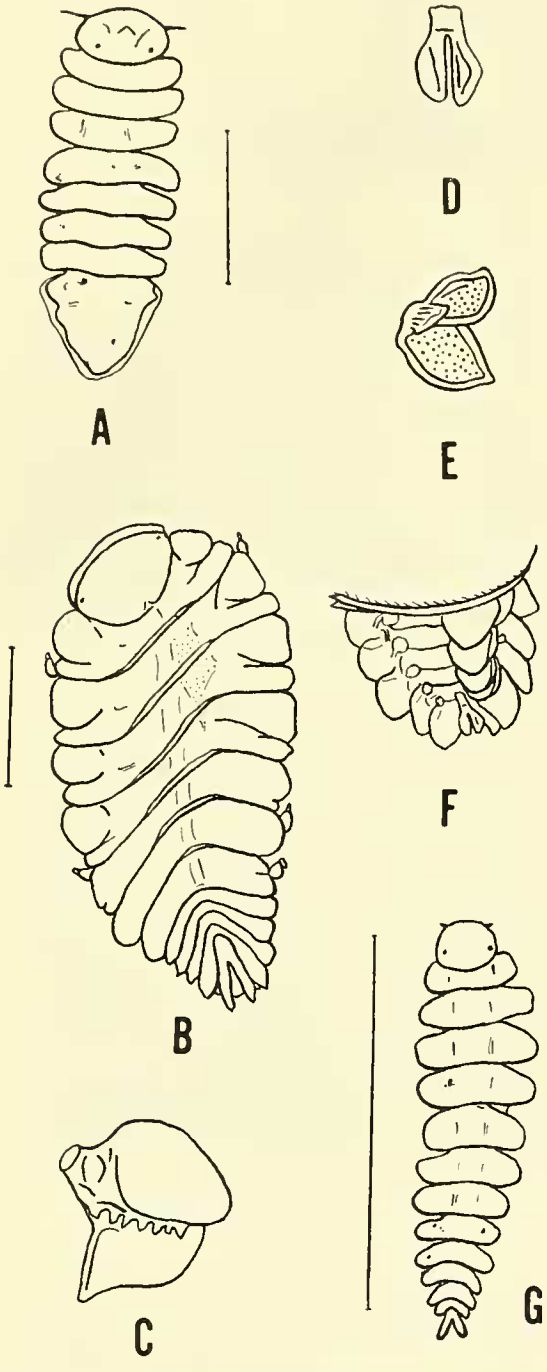

Figure 1. A, *Parathelges weberi*, dorsal aspect of male, scale equals 1 mm. B-G, *Pseudione novaeguineensis*, new species: B, dorsal aspect of female, scale equals 1 mm; C, inner aspect of oostegite I; D, ventral aspect of uropoda of female; E, right pleopod I of female, exopodite is the larger; F, ventral portion of female pleon, right pleopods removed; G, dorsal aspect of male, scale equals 1 mm.

towards host branchiostegite. Cephalon slightly bilobed posteriorly. Eyes present, but tiny. Frontal margin of cephalon upturned to form a "velum." Head sunken into thorax.

Thorax of 7 thoracomeres, I-IV with anterolateral and post-lateral plates. Coxal plates very poorly indicated on first 4 right segments. Seven pairs of small, well-formed pereopods. No swelling on basal articles of the legs. Five pairs of oostegites, barely meeting over the marsupium. Oostegite I with pronounced teeth on inner aspect. Dorsum quite concave, without tubercles. Two epicaridea larvae in the marsupium.

Abdomen of 5 pleomeres, tapering rapidly posteriad. Pleomeres strongly arched anteromedially, clearly demarcated, with pleural ends non-contiguous. Segment V so arched as to appear bifurcated. Five pairs biramous pleopods, each ramus leaflike and subequal. One pair uniramous uropods on telson, which appears to be fused to mid-ventral surface of pleomere V.

Male. Length 1.1 mm, width 0.3 mm. Body fusiform. Head sunken into, but not fused with, thoracomere I. Eyes obvious. Antennae I and II short (2-3 articles), barely evident in dorsal view.

Thorax of 7 thoracomeres, having widely separated terminations. Seven pairs of large pereopods. No mid-ventral tubercles. Scattered pigment spots dorsally.

Abdomen of 6 pleomeres, sixth sharply arched. Lateral plates widely separated. No pleopods, although occasional swellings present and unpaired.

The female holotype and the male allotype are deposited in the Allan Hancock Foundation Collection, no. 694 and 694a, respectively.

Remarks: Two other crabs of the same description, and parasitized by the same bopyrid species, were found at the collecting site. However, none was as clearly segmented as were the selected holotype and allotype. Both sexes of the host were parasitized.

Descriptions and identifications of *Pseudione* in the literature leave considerable question as to uniformity of critical features. As summarized by Danforth (1970), Sars (1899) indicated that *Palaegyge hoylii* was equivalent to *Pseudione affinis;* Barnard (1920) said that *Palaegyge* and *Pseudione* could be best separated by the warts on the female pleopods (which are variable); Calman (1898) apparently felt that *Palaegyge borrei* was essentially the same as *Pseudione giardi;* Nierstrasz and Brender à Brandis (1929) felt that *Palaegyge* might be *Probopyrus*, and Van Name (1936) indicated that if this were so, *Probopyrus* had priority; Nierstrasz and Brender à Brandis (1931) substituted *Pseudione* for the genus *Cryptione;* Stock (1960) felt that

Pleurocrypta porcellanae should be *Pseudione convergens*, but this was contested by Bourdon (1965); etc.

With approximately 60 species of *Pseudione* so far described, identification of a new form is quite difficult, and requires a survey of the original papers. The only original description not obtained for comparative study was that by Rodriguez y Femenias (1886), in which Kossmann apparently described *Palaegyge fraissei* as a footnote on page 3. This form was then called *Pleurocrypta balearica* by Giard and Bonnier (1887), and later *Pseudione fraissei* by Stebbing (1893). In view of the complexity and confusion surrounding the genus, Nierstrasz and Brender à Brandis (1923) attempted to sort *Pseudione* into 3 groups: (a) having no abdominal plates, (b) having distinct abdominal plates plus unseparated coxal plates, and (c) having distinct abdominal plates plus separated coxal plates. However, there are many intermediate forms, which necessitates checking the original works.

Pseudione novaeguineensis most nearly approaches *P. calcinii* Shiino (1958), and *P. diogeni* Popov (1924). It is very close to the first, but differs from the female in the sharpness of the pleomere plates, in the greater width and shorter length of the uropoda, in the greater breadth of the pleopoda, in the presence of teeth on the inner aspect of oostegite 1, in the double flexion of the body axis, in the more narrow body width, and as to the host. There was no male reported for *P. calcinii*.

Although the females of *P. diogeni* and *P. novaeguineensis* are similar, differing only regarding oostegite 1, the mid-dorsal pleon fusion, and the separation of pleopod rami, the males of the 2 species are drastically different. [It is interesting to note that Caroli (1948) felt that *P. diogeni* might be the same as *Gyge arcassonensis*]. There are also points of similarity with the female of *P. giardi* Calman (1898), and with the male of *P. tattersalli* Nierstrasz and Brender à Brandis (1923), but in each case the descriptions of the other sex do not coincide.

As can be concluded from the foregoing the taxonomy of bopyrids as a whole, and of *Pseudione* specifically, should be critically reviewed.

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A NEW INTRANASAL CHIGGER OF THE SUBGENUS *CRYPTICULA*, GENUS *MICROTROMBICULA* (ACARINA: TROMBICULIDAE) FROM TEXAS

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ABSTRACT: A new species of *Microtrombicula (Crypticula)* is based on intranasal larvae from *Peromyscus pectoralis* trapped near Del Rio, Val Verde Co., Texas.

Webb and Loomis (1970) reported nine intranasal species which belong to the subgenus *Crypticula* Webb and Loomis of the genus *Microtrombicula:* five from North America and four from Korea. *Microtrombicula diabola* Webb and Loomis (1970) was taken from two *Peromyscus difficilis nasutus* (rock mouse) trapped near Del Rio, Texas and attempts to obtain additional larvae from near the type locality (now under water of the Amistad Reservoir) yielded a second new species which is described below. Studies upon which this paper is based were supported by the U.S. Public Health Service Research Grant AI-03407 from the National Institute of Allergy and Infectious Diseases.

Microtrombicula welbourni, new species
Figure 1

Types. — Larvae: Holotype and 11 paratypes from the nasal passages of 2 *Peromyscus pectoralis laceianus* (white-ankled mouse) taken 10 mi N, 8 mi W Del Rio, 1000 ft, Val Verde Co., Texas, 28 July 1970, by W. C. Welbourn, Jr., R. B. Loomis, and R. C. Stephens, original numbers WCW700728-15 (holotype and 10 paratypes) and WCW700728-14 (1). The holotype and one paratype will be deposited in the collection of the Rocky Mountain Laboratory, Hamilton, Montana, and available paratypes will be sent to appropriate institutions.

Diagnosis. — Larva differing from all other members of the subgenus *Crypticula* in having 3-5 setae on coxa III (*M. ornata* bisetose, other species unisetose), and from *M. diabola* in possessing eyes, nude galeala, and dorsal knob on cheliceral blade.

Description of holotype (all measurements in microns, with means and ranges of all 12 types in parentheses, unless otherwise indicated). — Body engorged, 580 by 410; color in life, pale yellow; eyes 2/2, anterior larger, ocular plate indistinct.

Dorsal setae 2-6-6-6-6+14, total 40; measurements of humeral seta 43, anterior dorsal seta 29, posterior dorsal seta 27.

Ventral setae 2-2 (sternals)+48, total 52; measurements of anterior sternal seta 29, anterior ventral seta 28, posterior ventral seta 29.

Scutum: Subpentagonal: with large puncta in reticulate pattern; sensilla flagelliform with 3-5

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